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ABSTRACT

A survey instrument was sent to the superintendent of each school district in California in June 1980 to gather information about the uses of computers in instruction in the state's public elementary and secondary schools. The findings of the study indicate that: (1) just over one-third of the districts use computers in instruction; (2) at least two-thirds of the computer using districts use microcomputers; (3) hands-on experience in 82 percent of computer using districts is limited to less than 25 percent of the students; (4) mathematics followed by computer science/literacy, business education, and career education are the most popular curricular applications; (5) BASIC is used in over 60 percent of the instructional applications; (6) over 60 percent of the teachers in districts using computers are either unprepared or inadequately prepared to function in a computer supported environment; and (7) one-third of the districts not using computers are planning to initiate a program next year or soon thereafter. (Author/LLS)

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COMPUTER SUPPORTED INSTRUCTION IN CALIFORNIA
ELEMENTARY AND SECONDARY SCHOOLS

A Status Report

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March 1981

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CHAPTER 1

INTRODUCTION

Problem

This was a study to gather information about the uses of computers in the instructional process in public elementary and secondary schools in California. The specific purpose of the study was to gain information to provide a basis for designing teacher and administrator preparation courses about the instructional uses of computers. The study was planned to answer the following questions:

1. What are the current uses of computers for instructional purposes in elementary and secondary schools in California?
2. What are the anticipated uses of computers for instructional purposes in elementary and secondary schools in California?
3. What are the areas of preparation that schools of education must provide in order to meet current and anticipated needs in the schools?

Study Methodology

The data gathering instrument used in this study was a survey which was mailed to each school superintendent in California, a total of 1027. The instrument, "Survey of Computer Support in Educational Programs in Elementary and Secondary Schools in California," was mailed in June 1980. A follow-up letter and additional survey form was sent in July to each district not responding. Preposted return envelopes were included with both the first and second mailings.

Data Treatment

Generally, the data treatment was limited to arithmetic computations reflecting the nature of the survey questions. Because duplicate response counts were asked for in some items, and not precluded in others, the "percent of total responses" format was typically utilized.

Justification for Study

During the period 1980 to 1985, shipments of microcomputers to schools will account for more than one billion dollars, according to a well known computer market research firm (*). Furthermore, the same firm reported that over half of all microcomputers shipped during that period (systems costing less than \$15,000) will go to educational institutions. Because of the accelerated interest in computers in education, it was timely to explore the current status and future projections of computer use in instruction in California schools. Both teachers and administrators will need to make intelligent decisions about the implementation of this new technology. This study can provide a basis for planning new course content for the preparation of teachers and administrators.

Computer Supported Instruction

The use of the term computer supported instruction was selected for use in this study over other more specific terms, as for example, computer assisted instruction, computer based instruction, computer managed instruction, or computer assisted learning. This was literally a study of the use of computers in the support of instructional programs in California. Therefore, the use of this term allowed for the inclusion of a number of very specific computer learning approaches. Further status studies of more specific computer supported approaches to instruction would be helpful in gathering computer use data.

*Computer Business News, November 17, 1980, page 42.

CHAPTER 2

SURVEY RESULTS

A survey undertaken to gather data about the status of computer supported instruction in elementary and secondary schools was sent to each public school superintendent in California, a total of 1027. Just over half of them were returned (Table I, page 15). The rate of return was 44% from the elementary districts, 62% from the unified districts, and 70% from the secondary districts. As a study of the total district population these return rates were acceptable. As noted above, the high school and unified district return rates were well above the 50% level.

Schools Now Using Computers

The percent of schools using computers during the school year ending June 1980 was 36% for all schools (Table II, page 16). While only 18% of the elementary districts indicated that they were presently using computers, 61% of the secondary districts and 56% of the unified districts reported that they were using computers in instruction.

Instructional areas receiving computer support. The instructional areas receiving the most emphasis in computer support were mathematics, computer literacy/science, business education, and career guidance (Table III, page 17). In the elementary districts language development and gifted programs also received a high level of computer support. Career education received the second highest amount of support in the unified districts. Mathematics was identified more than twice as frequently over any other instructional area by all district types. As noted in Table III, computer literacy/science received virtually an equal number of responses from elementary, secondary, and unified school districts.

Because of inconsistent reporting on the grade-level matrices of the survey (APPENDIX B, Survey Items B, G and M, pages 34-36), specific grade-level data about the implementation, or proposed implementation, of instructional areas was not usable. However, this should not affect the validity of the other information reported.

Types of computer stations utilized. The small self-contained microcomputer was the most prevalent computer station reported by the responding school districts (Table IV, page 18). The time-sharing terminal was the second most utilized type. At the elementary level 80% of the terminals used were self-contained microcomputers. In the secondary and unified districts the time-sharing terminal was somewhat more in use but the popular choice was the microcomputer.

While this item asked for the actual number and types of computer stations used by districts, the data in terms of numbers of stations by types were not consistently provided by the responding districts. Therefore, the data from this item (APPENDIX B, Item C) were read only in terms of the kinds of stations reported by each district.

Amount of "hands-on" experience. Over 80% of the computer using districts reported that up to one-fourth of their students had "hands-on" experience with computers (Table V, page 19). Of the districts responding, 11% reported that between one-fourth and one-half of their students had direct experience with the computer. Nearly 6% of all districts responding reported that over half of the students had "hands-on" experience.

Scheduling of students to work at the computer. Almost half of the reporting schools (47%) indicated that they assigned their students for work at the computer during blocks of time (Table VI, page 20). The next most frequently reported mode was the open access mode, 29%. The high schools were almost evenly divided between block time assignments and open access, 38% and 35%, respectively. The third ranked method of scheduling students at the computers was the "as time is available" method, a method that might indicate time-sharing on a multiple purpose system.

Curricular approaches utilized. The curricular approach reported most often by the computer using districts was the "problem solving" approach (Table VII, page 21). A problem solving approach infers that the computer is utilized to solve real life problems. Modeling is an example of problem solving. Computing the relative gravitational force on each of the planets of our solar system would be a specific problem solving application.

Following problem solving, the districts were almost

evenly divided between the "basic skills" approach and the "enrichment" approach. The use of the computer at this point appears to be practical in its orientation. The "problem solving" approach relates directly to the real world whereas the "basic skills" and "enrichment" approaches relate to the preparation for the real world through drill and interest stimulation.

Use of word processing. About one-fourth of all the responding districts reported that they used word processing in their instructional program (Table VIII, page 22). Word processing refers to a specific computer application for generating written text in plain language such as reports, letters, forms, lists, etc.

While only 4% of the elementary districts reported using word processing, 37% of the high school districts were using this computer mode and 28% of the unified districts indicated that word processing was used in instruction.

Computer languages used. Of all the computer languages reported, BASIC was most frequently used by the districts, 63% of those responding (Table IX, page 23). FORTRAN and COBOL were the next languages in frequency of use, 12% and 10%, respectively. The reported high usage level of BASIC corresponds to the high usage level of microcomputers. The "standard" microcomputer language at this time is BASIC. The use of COBOL and FORTRAN appear to reflect time-sharing computer environments. Newer languages such as PASCAL and PILOT were reported to be utilized to only a very moderate degree.

Faculty preparation. The preparation of teachers was rated as inadequate by 65% of the districts (Table X, page 24). Of the high schools, 43% reported that their faculty were adequately prepared while the elementary schools reported that only 30% of their faculty were adequately prepared. Unified districts were only slightly more positive about the preparation of their teachers.

Faculty preparation needs. Looking at faculty preparation needs, all responding districts reported in almost equal numbers that their faculty needed preservice and inservice work in the use of computers in the instructional process (Table XI, page 25). The elementary schools suggested inservice staff development, but the high school and unified districts indicated that teacher preparing institutions should do more at the preservice level.

Inhibitors to computer supported instruction. Of the perceived problems inhibiting development of computer supported instruction in the schools, the lack of financial resources was identified as the most serious problem (Table XII, page 26). Next in order of frequency by reporting

districts was that faculty were inadequately prepared. The absence of an identified computer program director was reported as an inhibitor in 13% of the total responses. Lack of space received a response of 5%.

Projected instructional areas to receive computer support. School districts presently using computers in instruction indicated that computer literacy/ science, mathematics, science, and special education were the new areas to get future computer support (Table XIII, page 27). Among the elementary schools, mathematics and English showed the largest number of new area responses, with science next. Foreign language and language development/reading were the next two subject areas projected.

The secondary school districts indicated that business education was the most often mentioned area for future applications of computer support. Career education, computer literacy/science, mathematics, science, and special education were also identified for likely inclusion in the future. The unified districts projected computer support in the same areas as the secondary districts except they did not show high interest in business education.

Schools Not Using Computers

Faculty preparation. Over three-fourths of the responding districts not using computers reported that the faculty had practically no preparation in instructional computing (Table XIV, page 28). Almost 85% of the "not using" elementary districts reported with this response. The secondary districts divided 80% of their responses between "practically no preparation" and "some, but inadequate preparation." Eighteen percent of the secondary responses were that the faculty preparation was adequate at present, indicating that a basis exists for initiating computer supported instruction in those high schools.

Faculty preparation needs. Virtually all reporting non-computer using districts divided their responses evenly when asked to identify their faculty preparation needs (Table XV, page 29). Elementary, secondary, and unified districts responded essentially the same to this item indicating that both pre- and inservice preparation were needed.

Inhibitors to computer supported instruction. The order of identification of inhibiting factors in the development of programs in computer supported instruction by the districts not using computers was the same for all three school district types (Table XVI, page 30). The factor identified most often was the lack of financial resources. The next ones, in order, were (1) inadequately prepared

faculty, (2) lack of an identified program director, and (3) lack of space.

Plans for initiating programs. Among those districts who reported they were not now using computers to support instruction, almost one-third indicated that they would initiate a program the following year or soon thereafter (Table XVII, page 31). The unified districts indicated the greatest likelihood for beginning soon, with half of the districts reporting they would either begin in 1980-81 or very soon after that. Only about 16% of the elementary schools said they would begin the following year, 1980-81, with 9% of the others indicating they would begin in the near future. Virtually three-fourths of the responding elementary districts not now using computers indicated they had no plans. Of the secondary districts not now using computers, 37% reported they would begin a program the following year or in the near future.

Projected instructional areas of computer support of districts not now using computers. School districts who are not now using computers but who plan to initiate a program in the near future show a very strong inclination to initiate programs in certain areas (Table XVIII, page 32). The elementary districts identified mathematics as the most popular subject area to receive computer support. The next area was language development/reading. The secondary districts showed a preference for mathematics and business education in that order. The unified districts also showed the greatest preference for mathematics, and then business education. Of the total group of districts planning to begin a program soon, almost 30% selected mathematics as an area to receive computer support.

CHAPTER 3

SUMMARY AND INTERPRETATION OF DATA

Summary of Data

The following summarize the findings of this survey of computer supported instruction in California schools:

1. Just over one-third of the school districts in California use computers to support instruction.
2. At least two-thirds of the computer using school districts utilize microcomputers in their programs.
3. Most districts using computers (82%) provide "hands-on" experience to less than 25% of their students.
4. The most widely used curricular approach with computers is reported to be problem solving. The basic skills approach and the enrichment approach were ranked equally as second most frequently used.
5. Most computer support is provided in mathematics followed by computer literacy/science, business education, and career education. Districts not now using computers but planning to initiate a program in the near future also show a strong interest in mathematics with language development/reading next. Districts using computers but who plan to expand areas of computer support also want to include mathematics as well as science, computer literacy/science, and special education.
6. Word processing as a specific computer application is utilized in instruction by about one-fourth of

the districts.

7. The most widely used computer language employed is BASIC.
8. Among districts using computers, additional emphasis in mathematics, computer literacy/science, and science is most often indicated.
9. The majority of teachers in California schools using computers are either without preparation or inadequately prepared in the use of computers in instruction. An even greater percentage of teachers in schools not using computers are inadequately prepared in this area.
10. Both pre- and inservice preparation in the instructional use of computers is indicated as a need in over 90% of the responses.
11. The lack of financial resources is the primary inhibitor to the implementation of computer supported instruction, followed by inadequately prepared faculty.
12. One-third of the districts not using computers in instruction plan to initiate a program in the next year or soon thereafter.

Interpretation of Findings

The following interpretations can be made on the basis of the results of this study:

1. The number of California school districts using computers to support instruction could double within two to three years, based on the districts now using computers and those who are planning to use computers in the near future.
2. The microcomputer will continue to dominate the scene for some time in computer supported instruction.
3. While the number of computer using school districts is increasing, the opportunity for each student to use a computer will remain somewhat limited for some time to come.
4. While problem solving as a curricular approach was the most widely reported, it is possible this item was misinterpreted to mean the solving of problems

such as basic drill problems. If the item was correctly reported it represents a higher level of instructional application than might be expected at this time. Further investigation should be made in this area.

5. Virtually all curricular areas have potential for computer applications. While mathematics appears to be the dominant choice, there are several other areas that will continue to receive increasing attention.
6. Teacher education has both a great opportunity and a great responsibility to prepare teachers and administrators to be able to plan and implement programs of computer supported instruction. All teacher and administrator credential candidates will need to demonstrate some knowledge of computers and computing in the educational setting.
7. Until meaningful financial assistance is available to school districts, the general implementation of computer supported instruction programs will be inhibited, although there is ample evidence from this study that many districts will initiate programs in the near future. Program implementation, in the absence of additional funding, will more likely be in the form of discrete localized efforts rather than general district-wide commitments.

CHAPTER 4

CONCLUSIONS

The following are conclusions about the need to be met by teacher preparing institutions in the area of computer supported education:

1. There is a growing need in schools of education for courses in computer literacy emphasizing computer supported instruction. Being literate in educational computing will be an area of demand by employing school districts. The ability to write computer programs will be expected, as will be the ability to assess the value and quality of available software. A basic and contemporary knowledge of computer systems will be expected of program directors and coordinators, as well as building and district administrators. In short, both teachers and administrators will be expected to speak with authority on the relative merits of various computer configurations and computer supported instruction approaches.
2. Expertise in computer applications and management is a growing area of need for school administrators. Schools of education will need to provide support in administrator preparation programs to meet this need. Basic knowledge of the relative advantages and disadvantages of various computer configurations, such as time-sharing systems and stand-alone microcomputers, will be required. Future administrators will be expected to implement computer supported instruction programs on top of the established ongoing instructional programs. This will require skillful management in the planning, development, and control of programs utilizing computer support.

3. Candidates for teacher credentials need to have a rich and ongoing experience with computers while preparing for teaching. The classroom of the near future that does not have access to a computer for instruction will be an exception.
4. Courses in curriculum planning and design will need to integrate computer approaches to instruction in their design.
5. A minimum competency in the theory and use of computers in instruction will need to be demonstrated by teachers and administrators as a requirement for a credential.

APPENDIXES

APPENDIX A

TABLES

TABLE I

RESPONSES TO SURVEY OF COMPUTER SUPPORT IN EDUCATIONAL PROGRAMS
IN CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
AUGUST 1980

Group	Questionnaires		
	Mailed Out	Returned	% Returned
Elementary Districts	652	287	44.0
Secondary Districts	107	75	70.1
Unified Districts	268	167	62.5
Total	1027	529	51.5

TABLE II

USE OF COMPUTERS IN INSTRUCTIONAL PROGRAMS IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Group	Now Using	Not Using	% Using
Elementary Districts	53	234	18.4
Secondary Districts	46	29	61.3
Unified Districts	94	72	56.2
Total	193	335	36.2

TABLE III
INSTRUCTIONAL AREAS RECEIVING COMPUTER SUPPORT IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Subject Areas	Percent of Responses			Total
	Elementary	Secondary	Unified	
Business Education	2.2	13.5	12.4	10.1
Career Education	3.7	9.5	13.1	9.9
Computer Lit/Science	12.7	11.1	12.0	12.0
English	6.7	3.1	4.9	4.8
Foreign Language	3.7	4.0	1.5	2.7
Language Dev/Reading	11.9	3.1	7.5	7.4
Mathematics	31.3	30.1	27.7	29.5
Science	3.7	8.7	8.6	7.4
Social Science	7.5	2.4	2.2	3.7
Special Education	3.0	6.3	4.1	4.3
Gifted/MGM	11.2	5.6	5.6	7.2
Other	2.2	2.4	.4	1.2
=====				
Duplicated Response Total	134	126	267	527
=====				

TABLE IV

TYPES OF COMPUTER STATIONS IN INSTRUCTIONAL LOCATIONS IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Type of Station	Percent of Responses			Total
	Elementary	Secondary	Unified	
Time-sharing terminal	16.4	23.7	26.1	23.0
Self-contained (micro) Systems	80.0	67.8	63.9	68.7
Other	3.6	8.5	10.0	8.3
Duplicated Response Total	55	59	119	233

TABLE V

AMOUNT OF "HANDS-ON" EXPERIENCE WITH COMPUTERS IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Students with "Hands-On" Time	Percent of Responses			
	Elementary	Secondary	Unified	Total
Less than 25%	76.4	78.7	88.3	82.8
25% to 50%	13.7	19.1	6.4	11.4
50% to 75%	3.9	0.0	4.3	3.1
Over 75%	5.9	2.1	1.0	2.6
Duplicated Response Total	53	46	94	193

TABLE VI

METHOD OF SCHEDULING STUDENTS FOR WORK AT COMPUTER STATION IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Method	Percent of Responses			Total
	Elementary	Secondary	Unified	
Block time assignments	49.2	38.5	50.9	47.9
As per time available at computer	15.3	18.5	12.1	14.7
Open access	23.7	35.4	28.4	29.4
Other	11.9	7.6	8.6	9.2
Duplicated Response Total	59	65	116	240

TABLE VII

CURRICULAR APPROACHES TO COMPUTER SUPPORTED INSTRUCTION IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Approach	Percent of Responses			Total
	Elementary	Secondary	Unified	
Basic skills	30.6	30.9	25.5	28.3
Enrichment	28.5	23.8	28.0	27.1
Problem solving	37.8	41.7	43.9	41.6
Other	3.1	3.6	2.5	2.9
Duplicated Response Total	98	84	157	339

TABLE VIII

INCLUSION OF WORD PROCESSING IN THE INSTRUCTIONAL PROGRAM IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Response	Percent of Responses			Total
	Elementary	Secondary	Unified	
Included	4.3	37.0	28.6	25.3
Not included	95.7	63.0	71.4	74.7
Total	46	41	91	178

TABLE IX
COMPUTER LANGUAGES UTILIZED IN THE INSTRUCTIONAL PROGRAM IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Language	Percent of Responses			Total
	Elementary	Secondary	Unified	
APL	1.9	1.8	2.5	2.2
BASIC	75.0	58.9	60.1	63.6
COBOL	3.8	12.5	12.5	10.5
FORTRAN	7.6	12.5	14.2	12.3
PASCAL	3.8	7.1	2.5	3.9
PILOT	3.8	0.0	2.5	2.2
OTHER	3.8	7.1	5.0	5.3
Duplicated Response Total	52	56	120	228

TABLE X

FACULTY PREPARATION IN THE USE OF COMPUTERS IN INSTRUCTION IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Preparation	Percent of Responses			Total
	Elementary	Secondary	Unified	
Practically none	30.9	27.1	24.5	26.8
Some, but inadequate	38.2	29.1	42.9	38.3
Adequate at present	30.9	43.8	32.6	34.8
Total	53	46	94	193

TABLE XI

FACULTY PREPARATION NEEDS FROM TEACHER PREPARING INSTITUTIONS IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Preparation Needed	Percent of Responses			Total
	Elementary	Secondary	Unified	
Preservice computer literacy and use	44.6	48.6	49.3	47.8
Inservice staff development	50.6	42.8	43.2	45.2
Other	4.8	8.6	7.4	7.0
Duplicated Response Total	83	70	148	301

TABLE XII

PROBLEMS INHIBITING DEVELOPMENT OF COMPUTER SUPPORTED INSTRUCTION IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS
DURING SCHOOL YEAR ENDING JUNE 1980

Problem	Percent of Responses			Total
	Elementary	Secondary	Unified	
Lack of financial resources	46.5	48.8	49.1	48.4
Inadequately prepared faculty	30.2	26.2	25.7	27.0
Lack of program director	14.0	14.3	13.2	13.6
Lack of space	5.8	3.6	5.4	5.0
Other	3.5	7.1	6.6	5.9
Duplicated Response Total	86	84	167	337

TABLE XIII

PROJECTED INSTRUCTIONAL AREAS TO RECEIVE COMPUTER SUPPORT IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS USING COMPUTERS
DURING SCHOOL YEAR ENDING JUNE 1980

Subject Areas	Percent of Responses			Total
	Elementary	Secondary	Unified	
Business Education		25.0	6.2	8.0
Career Education	2.6	10.7	10.4	8.6
Computer Lit/Science	7.9	10.7	12.5	11.1
English	15.8	3.6	7.3	8.6
Foreign Language	10.5		3.1	4.3
Language Dev/Reading	10.5	3.6	9.4	8.6
Mathematics	15.8	10.7	16.7	15.4
Science	13.2	10.7	11.5	11.7
Social Science	7.9	7.1	7.3	8.0
Special Education	5.2	10.7	10.4	9.9
Gifted/MGM	3.8	3.6	5.2	4.3
Other		3.6		1.2
Duplicated Response Total	38	28	96	162

TABLE XIV

FACULTY PREPARATION IN THE USE OF COMPUTERS IN INSTRUCTION IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS NOT USING COMPUTERS
DURING SCHOOL YEAR ENDING JUNE 1980

Preparation	Percent of Responses			Total
	Elementary	Secondary	Unified	
Practically none	84.6	40.7	67.6	77.2
Some, but inadequate	9.5	40.7	25.0	15.5
Adequate at present	5.9	18.5	7.4	7.3
Total	221	27	68	316

TABLE XV

FACULTY PREPARATION NEEDS FROM TEACHER PREPARING INSTITUTIONS IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS NOT USING COMPUTERS
DURING SCHOOL YEAR ENDING JUNE 1980

Preparation Needed	Percent of Responses			Total
	Elementary	Secondary	Unified	
Preservice computer literacy and use	46.9	47.8	48.3	47.3
Inservice staff development	49.5	47.8	50.6	49.6
Other	3.5	4.3	1.1	3.1
Duplicated Response Total 311		46	89	446

TABLE XVI

PROBLEMS INHIBITING DEVELOPMENT OF COMPUTER SUPPORTED INSTRUCTION IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS NOT USING COMPUTERS
DURING SCHOOL YEAR ENDING JUNE 1980

Problem	Percent of Responses			Total
	Elementary	Secondary	Unified	
Lack of financial resources	36.8	47.8	48.66	40.1
Inadequately prepared faculty	23.6	28.3	20.7	23.3
Lack of program director	20.8	13.0	15.0	19.1
Lack of space	9.8	4.3	9.3	9.3
Other	8.9	6.5	6.4	8.2
Duplicated Response Total	470	46	140	656

TABLE XVII

PROJECTIONS FOR INITIATING INSTRUCTIONAL COMPUTING IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS NOT USING COMPUTERS
DURING SCHOOL YEAR ENDING JUNE 1980

Response Choice	Percent of Responses			Total
	Elementary	Secondary	Unified	
Plan to initiate next year (80-81)	15.8	14.8	20.5	16.8
Not next year, but soon	9.0	22.2	29.5	15.0
No plans at this time	75.2	63.0	50.0	68.2
Duplicated Response Total	222	27	78	327

TABLE XVIII

PROJECTED INSTRUCTIONAL AREAS TO RECEIVE COMPUTER SUPPORT IN
CALIFORNIA ELEMENTARY AND SECONDARY SCHOOLS NOT USING COMPUTERS
DURING SCHOOL YEAR ENDING JUNE 1980

Subject Areas	Percent of Responses			Total
	Elementary	Secondary	Unified	
Business Education	1.3	20.0	18.9	9.2
Career Education	6.3	6.7	14.7	9.2
Computer Lit/Science	5.7	10.0	8.4	7.1
English	8.2	10.0	7.4	8.1
Foreign Language	2.5		2.1	2.1
Language Dev/Reading	17.8	6.7	7.4	13.1
Mathematics	30.4	26.7	27.4	28.9
Science	8.9	10.0	10.5	9.5
Social Science	7.0	3.3	2.1	4.9
Special Education	5.0	6.7	1.1	3.9
Gifted/MGM	3.8			2.1
Other	1.9			1.8
Duplicated Response Total	158	30	95	283

APPENDIX B

SURVEY INSTRUMENT

SURVEY OF COMPUTER SUPPORT IN EDUCATIONAL PROGRAMS
IN ELEMENTARY AND SECONDARY SCHOOLS IN CALIFORNIA

The School of Education at California State University, Fresno is planning courses to meet the needs of pre- and inservice teachers in the uses of computers in elementary and secondary education. The purpose of this survey is to determine the present status of the use of computers in the public schools of California. The term, "computer support," was selected to encompass the concepts found in computer assisted, computer based, and computer managed education.

District name and address:

[LABEL]

Name of District Contact Person _____

DIRECTIONS

Please circle the number of the appropriate response or responses for each item below.

A. Are you presently using computers in your instructional program?

1. Yes
2. No (If "No," please go to Item "I")

B. What instructional areas and grades receive computer support?

- | | |
|---------------------------------|------------------------------|
| 1. Business Education | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 2. Career Education | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 3. Computer Literacy/Science | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 4. English | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 5. Foreign Language | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 6. Language Development/Reading | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 7. Mathematics | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 8. Science | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 9. Social Science/Studies | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 10. Special Education | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 11. _____ | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 12. _____ | K 1 2 3 4 5 6 7 8 9 10 11 12 |

C. How many computer stations do you have in your district in instructional locations?

1. Time-sharing terminals _____
2. Self-contained systems (microcomputers) _____
3. Other _____

D. What percent of your students have "hands on" experiences with computers in your educational program?

1. Less than 25%
2. 25% to 50%
3. 50% to 75%
4. Over 75%

E. Which of the following best describes the way you schedule students for work at the computer?

1. Block time assignments to groups or classes
2. Open access as students' schedules permit
3. Irregularly scheduled as computer time is available
4. _____

F. Which of the following best typifies your curricular approach to providing computer support to your educational program? (More than one response, if appropriate)

1. To enhance the development of basic skills, e.g., math, geography, reading, spelling
2. To enrich the learning experiences of the pupils, e.g., simulation, games, data retrieval
3. To learn about computers and computing, e.g., computer literacy, programming, relevant problem solving with the computer
4. _____

G. Is word processing utilized in your instructional program?

1. Yes

If "yes," what subject areas and grades?

_____	K 1 2 3 4 5 6 7 8 9 10 11 12
_____	K 1 2 3 4 5 6 7 8 9 10 11 12
_____	K 1 2 3 4 5 6 7 8 9 10 11 12

2. No

H. What languages are used in your computer programs?

- | | |
|------------|-----------|
| 1. APL | 5. PASCAL |
| 2. BASIC | 6. PILOT |
| 3. COBOL | 7. _____ |
| 4. FORTRAN | 8. _____ |

I. What is the level of preparation of your faculty in the use of computers in instruction?

1. Practically no preparation
2. Some preparation, but inadequate for present or anticipated needs
3. Adequate for our present level of involvement

J. How can teacher preparing institutions, such as California State University, Fresno, help school districts in the area of computer support in instruction?

1. Provide basic preparation in computer literacy and computer use for new teachers
2. Provide for staff development activities for teachers in service

3. _____
 4. _____
- K. What problems seriously inhibit the development of computer support in instruction in your district?
1. Lack of financial resources
 2. Inadequately prepared faculty
 3. Lack of qualified "on-site" program director/coordinator
 4. Lack of space
 5. _____
- L. If you are not currently using computers in educational programs, what are your plans for the future?
1. Probably will initiate a program next year (1980-81)
 2. Probably will initiate a program soon, but not next year
 3. We have no plans at this time
- M. If you are not currently using computers in educational programs but anticipate getting started, or if you are now using computers in your program and are planning to expand their use, in what subjects and grades are you planning to initiate, or expand to?
- | | |
|---------------------------------|------------------------------|
| 1. Business Education | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 2. Career Education | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 3. Computer Literacy/Science | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 4. English | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 5. Foreign Language | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 6. Language Development/Reading | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 7. Mathematics | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 8. Science | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 9. Social Science/Studies | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 10. Special Education | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 11. _____ | K 1 2 3 4 5 6 7 8 9 10 11 12 |
| 12. _____ | K 1 2 3 4 5 6 7 8 9 10 11 12 |

Thank you for your assistance in completing this survey. Please attach any additional comments or materials that you would like to share with us regarding the implementation of computers in educational programs in your district. This fall you will receive a summary of the findings.

Please return the survey in the envelope provided to:

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 School of Education
 California State University, Fresno
 Fresno, CA 93740